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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 18

Application Number: 09/401,132
Filing Date: September 22, 1999
Appellant(s): LEE ET AL.

Kin-Wah Tong (Reg. No. 39,400)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/08/03.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 21-30 and 32-38 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,055,330	Eleftheriadis et al.	04-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

DETAILED ACTION

Double Patenting

Claims 22-24, 27-34, and 37-38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,023,296. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are broader in scope. Allowance of these claims would give Applicant an undue timewise extension of monopoly.

Claim Rejections - 35 USC § 102

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,055,330 to Eleftheriadis et al.

As for claims 22, 24, 29, 31, 32, and 34, Column 11, Lines 53-67, and Column 12, Lines 1-32, Eleftheriadis discloses objects associated with, assigned, or allocated a target object bit rate, based on a target frame bit rate. Specifically, R is the frame bit rate, or target frame bit rate, R sub i, is a target average bit rate for each object, and *a* sub i, is the amount of the total frame rate R, which is allocated to the object, while R sub n, is the amount of the total frame rate R, which is allocated to the background. Furthermore, the allocation of the target frame bit rate in accordance to a target object bit rate, for at least one object, is also disclosed in Column 12, Equation 4. As can be seen, part of the target frame bit rate is allocated or distributed as target object bit rate, while the remainder is allocated or distributed as background target bit rate, the sum of the two being equal to R (target frame bit rate). Column 15, lines 19-35 disclose multiple functions of Eleftheriadis' invention, being implemented through software and hardware, which is equivalent to instructions being stored on a computer readable medium, for carrying out the method of claim 22. In addition, this section also teaches that the target object bit rate is adjusted depending on buffer fullness.

Regarding claims 25 and 35, Column 3, Lines 26-30 discloses using shape information for both field or frame compression, as well as, object-based compression. Syntax information, motion information, and shape information are all inherent part of object-based compression.

As for claims 26 and 36, Column 19, Lines 23-35 discloses other rate control techniques, which assigns different bit rates to objects based on shape or depth information.

As for claims 27 and 37, Column 10, Lines 34-45 shows quantization being dependent on a specific object and its attributes, i.e. bit rate.

With regard to claims 28 and 38, Column 15, Lines 19-35 shows quantization steps being selected by a rate controller, which is directly related to the quantization mode selected by the encoder, for encoding object information.

As for claims 23, 30, and 33, Eleftheriadis, teaches the use of the sum of the absolute differences, between two VOP to obtain shape information, and further control the rate at which object information is processed. The mean absolute difference is an inherent manipulation of data obtained through the summing of the absolute differences.

(11) Response to Argument

Appellant's Arguments

With regard to claims 22, 29, and 32, as well as claims 23-28, 30, and 33-38, which depend therefrom, respectively, Appellant argues that Eleftheriadis does not teach a target frame bit rate, that the disclosure of R is only to prevent buffer overflow, and that R is not equal to a target frame bit rate.

Examiner's Response

First off, the Examiner would like to point out that the disclosure of R by Eleftheriadis, in column 11, lines 53-67, and column 12 lines 1-32, is used to prevent buffer overflow, however, R is calculated using equation 4, in column 12, which utilizes R sub i. As shown in column 11, lines 65-67, R sub i is a target bit rate for each object. Buffer overflow is prevented based on the calculation of R, and the allocation for objects. Furthermore, any bit rate utilized to maintain buffer fullness, and prevent overflow can be considered a target bit rate, because it is desirable to keep information going in and out of the buffer at the same rate. That rate of equilibrium, would therefore be a target bit rate.

Appellant's Arguments

With respect to claims 23, 30, and 33, Appellant further argues that the Eleftheriadis reference fails to teach or suggest that the target object bit rate is selected in accordance with mean absolute differences of the object.

Examiner's Response

Column 18, line 54 through column 19, line 13, clearly state that the sum of absolute differences is utilized to determine shape information between two VOP frames. In other words, the sum of absolute difference between a current pixel and a previous pixel is obtained for the purpose of comparing the dissimilarity between two

VOP's, and further to obtain shape information relative to an object. It should also be noted that the mean absolute differences, as opposed to the sum of absolute differences is merely a manipulation of data, and is inherent to the data collected by Eleftheriadis.

Appellant's Arguments

With respect to claims 24 and 34, Appellant argues that the Eleftheriadis reference fails to teach the target object bit rate being adjusted based on buffer fullness.

Examiner's Response

The Examiner would like to point out that the disclosure of R by Eleftheriadis, in column 11, lines 53-67, and column 12 lines 1-32, is used to prevent buffer overflow, however, R is calculated using equation 4, in column 12, which utilizes R sub i. As shown in column 11, lines 65-67, R sub i is a target bit rate for each object. Buffer overflow is prevented based on the calculation of R, and the allocation for objects. Furthermore, any bit rate utilized to maintain buffer fullness, and prevent overflow can be considered a target bit rate, because it is desirable to keep information going in and out of the buffer at the same rate. That rate of equilibrium, would therefore be a target bit rate. It should also be noted, that the target bit rate is adjusted to maintain the state of equilibrium, as needed, otherwise the buffer would underfill or overfill.

Appellant's Argument

With respect to claims 25 and 35, Appellant argues that the target object bit rate is not allocated to a code syntax information, a motion information, and shape information of the object.

Examiner's Response

Column 3, lines 26-30 disclose using shape information for both field and frame compression, as well as, object-based compression. The Examiner would like to point out that syntax information, motion information, and shape information, contrary to Appellant's assertion, are common parts of object-based compression. Furthermore, all of the aforementioned attributes are associated with an object, therefore allocation of the target object bit rate, as disclosed in column 11, is inherently taught by the cited reference.

Appellant's Argument

With respect to claims 25 and 35, Appellant argues that adjustment of bit allocation to shape information of the object is neither taught nor suggested.

Examiner's Response

The Examiner would like to point out that column 19, lines 23-35, specifically states that other rate control techniques, such as identifying different objects, could be employed, wherein the system will automatically assign appropriate bit rates or quality levels to objects. Again objects are associated with shape, and Eleftheriadis discloses assigning appropriate rates. Appropriate based on size, shape, etc.. Furthermore, once again buffer overflow needs to be prevented, so bit rates are adjusted for this reason also.

Appellant's Argument

Appellant argues that Eleftheriadis fails to teach generating a quantizer scale.

Examiner's Response

Column 10, lines 34-53 shows quantization being dependent on a specific object and its attributes, such as bit rates.

Appellant's Argument

Appellant's arguments pertaining to claims 28 and 38 are relatively the same as those of claims 22 and 32 and will not be repeated here.

Examiner's Response

First off, the Examiner would like to point out that the disclosure of R by Eleftheriadis, in column 11, lines 53-67, and column 12 lines 1-32, is used to prevent buffer overflow, however, R is calculated using equation 4, in column 12, which utilizes R sub i. As shown in column 11, lines 65-67, R sub i is a target bit rate for each object. Buffer overflow is prevented based on the calculation of R, and the allocation for objects. Furthermore, any bit rate utilized to maintain buffer fullness, and prevent overflow can be considered a target bit rate, because it is desirable to keep information going in and out of the buffer at the same rate. That rate of equilibrium, would therefore be a target bit rate.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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GAB

March 8, 2004

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